REMARKS

Claims 1-12 and 23 are pending in the application. Claims 3 and 7 have been amended in this response. Reconsideration of the application is respectfully requested in view of the comments below.

I. PROVISIONAL ALLOWANCE OF CLAIMS 3-12

Claims 3-12 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten into independent form. Applicant notes with appreciation the provisional allowance of claims 3-12. Claims 3 and 7 have been amended into independent form, and thus claims 3-12 are now believed to be in condition for allowance. Since the above amendments reduce the number of outstanding issues in the application, entry of the amendment is respectfully requested. Accordingly, withdrawal of the objection is respectfully requested.

II. REJECTION OF CLAIMS 1-2 AND 22 UNDER 35 U.S.C. § 103(a)

Claims 1-2 and 23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 3,906,294 (Lourigan) in view of U.S. Patent No. 4,544,349 (Nakamura et al.). Withdrawal of the rejection is respectfully requested for at least the following reasons.

i. Lourigan does not teach a voltage or temperature independent timer circuit in an electric cord set as recited in claim 1.

Claim 1 is directed to an oil burner system having ***an electric cord set that is coupled between a controller and a solenoid valve associated with a pump***. The electric cord set comprises a voltage or temperature independent timer circuit that is operable to active the solenoid valve. Contrary to the assertion made in the Office Action of 9/21/04, Lourigan does not teach or suggest such a cord set coupled between the controller and the valve. Rather, ***the reference teaches a timer circuit that is integrated within the solenoid valve***.

Lourigan discloses a solenoid valve having a delay associated therewith in accordance with applicants' description of the prior art. For example, as disclosed in applicants' background on pages 2 and 3, one prior art solution that avoided replacing a controller on an oil burner system with a new, expensive controller that incorporates a time delay therein was to add an external solenoid valve on the burner housing on or near the pump 18 (*see, e.g.*, reference numeral 19 indicating a solenoid valve in prior art Fig. 1). Such valves incorporating a time delay, however, may be costly and may cause physical interferences and undesirably take space, which can be a challenge when a burner is covered by an enclosure.

As can be seen from Lourigan, the cited reference teaches a valve as known in the prior art, where an external solenoid valve comprises a housing 62 with a timer therein (*see* Lourigan, Figs. 3 and 4). The valve has leads 68 that couples to the controller (not shown) while the valve is operably associated with a pump (not shown). The cited reference further teaches a delay circuit residing on a printed circuit board (PCB) 74 that resides within the solenoid valve housing 62 (*see, e.g.*, Fig. 4 and Col. 5, lns. 34-41). ***No cord set is taught or suggested by the reference. To the extent that one could attempt to interpret the leads 68 leading to the valve housing 62 as a cord set, the delay circuit is clearly not within the leads, but instead is on the PCB within the solenoid housing 62.*** Clearly then, the cited art does not teach or suggest a timer circuit within the cord set as claimed.

The Office Action states that the solenoid housing package is properly considered to be part of an electric cord set. This statement is incorrect. Applicants' specification clearly differentiates between a valve and a cord set (*see, e.g.*, Fig. 1, with a valve 19 on a pump 18, with a cord set coupled between the valve 19 and a controller), and one of ordinary skill in the art would clearly understand the meaning of the term cord set and that a cord set is distinguishable from a valve, particularly in light of applicants' specification. As discussed in the specification, and as appreciated by those of ordinary skill in the art, such distinction provides advantages over the solution of Lourigan. For example, such increased size can be disadvantageous in some

circumstances where the size of the oil burner system is at issue, or when the burner is to be covered by an enclosure. In contrast, having the timer circuit in the cord set according to the present invention advantageously permits the timer to be utilized in conjunction with various makes and models of solenoid valve. Therefore Lourigan does not teach a timer circuit ***within an electric cord set*** as claimed.

Since neither Lourigan et al. nor Nakamura et al. teach or suggest this feature, the present invention is non-obvious and thus patentable over the cited art. Accordingly, withdrawal of the rejection is respectfully requested.

ii. Lourigan does not teach a full-bridge circuit as recited in claim 23.

Claim 23 is directed to a timer circuit comprising a full-bridge circuit. The full-bridge circuit is operable to receive a sinusoidal line voltage signal at an input and ***provide a full-wave rectified voltage signal at an output thereof***. Lourigan fails to teach or suggest the above feature. Rather, ***Lourigan discloses providing a half-wave rectified signal via the diode 30***. This difference is not inconsequential; the half-wave rectified current of Lourigan provided to the solenoid 16 has time periods associated therewith when the current is approximately zero for an extended period of time. During such time, the solenoid coil 16 is not activated or energized, and the solenoid plunger associated with many types of solenoid valves begins to return to its "at-rest" location (*i.e.*, become unseated), instead of staying in its desired, energized location. In contrast, the full-bridge circuit of the present invention provides a full-wave rectified voltage signal, and the current provided to the solenoid associated therewith is a full-wave current without extended periods at which the current is approximately zero. Consequently, the full-bridge circuit of the present invention advantageously facilitates a constant activation of the solenoid during activation periods, thereby maintaining the solenoid plunger in its seated position throughout the activation time period. Nakamura et al. do not remedy the deficiencies in the primary reference. Therefore claim 23 is

non-obvious over the cited art. Accordingly, withdrawal of the rejection is respectfully requested.

III. CONCLUSION

For at least the above reasons, the claims currently under consideration are believed to be in condition for allowance.

Should the Examiner feel that a telephone interview would be helpful to facilitate favorable prosecution of the above-identified application, the Examiner is invited to contact the undersigned at the telephone number provided below.

Should any fees be due as a result of the filing of this response, the Commissioner is hereby authorized to charge the Deposit Account Number 50-1733, RWBP101US.

Respectfully submitted,
ESCHWEILER & ASSOCIATES, LLC

By _____
Thomas G. Eschweiler
Reg. No. 36,981

National City Bank Building
629 Euclid Avenue, Suite 1210
Cleveland, Ohio 44114
(216) 502-0600

CERTIFICATE OF MAILING

I hereby certify that this paper (along with any paper or item referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first-class mail in an envelope addressed to Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Date: November 4, 2004 Christine Gillroy
Christine Gillroy